

**Outbreak of Foodborne Illness Associated with a Catered Lunch —
Shawnee County, 2008**



Background

On November 6, 2008, the Shawnee County Health Agency (SCHA) and the Kansas Department of Health and Environment (KDHE) were notified of gastrointestinal illness (GI) among attendees of a lunch held for a private trade organization. Three coworkers who attended the lunch experienced diarrhea and abdominal cramps within 24 hours of eating the meal. The event took place on November 5, 2008, and the food was prepared by a home-based caterer. SCHA, Kansas department of Agriculture (KDA) and KDHE initiated an investigation to determine the cause of the outbreak. The investigation included telephone interviews of lunch attendees regarding foods consumed and illness history, clinical laboratory testing, and an environmental investigation of the caterer.

Key Findings

- Fifteen of the 60 attendees developed gastrointestinal illness (25%).
- All 15 (100%) ill persons experienced diarrhea, 13 (87%) experienced abdominal cramps, 2 (13%) experienced nausea and 1 (7%) experienced fever. No one reported seeking medical assistance.
- Onset of illness ranged from November 4 to 5, 2008. All ill persons reported eating at the luncheon.
- The incubation period ranged from three to 21 hours with a median of 14 hours. Mean duration of illness ranged between 9 and 24 hours, with only one person reporting illness duration of 47 hours.
- Two persons submitted specimens for laboratory testing. Both specimens tested negative for norovirus. Other test results are pending.

- An investigation of the caterer's facility revealed that the caterer was home-based and unlicensed, and had inadequate facilities for the preparation, reheating and holding of the food items. The caterer was instructed to cease operations until she attained a license.
- No leftover food items were available for testing.
- No specific food was significantly associated with illness.

Preliminary Conclusions

A quarter of the lunch attendees experienced GI. Though not confirmed, the circumstances of the outbreak (including home-based, inadequate food preparation and storage, type of foods served, incubation period, symptoms, and illness duration) strongly suggest *Clostridium perfringens* foodborne intoxication. *C. perfringens* is a ubiquitous, anaerobic, gram-positive, spore-forming bacillus and a frequent contaminant of meat and poultry. *C. perfringens* food poisoning is characterized by onset of abdominal cramps and diarrhea 8-16 hours after eating contaminated meat or poultry. By sporulating, this organism can survive high temperatures during initial cooking; the spores germinate during cooling of the food, and vegetative forms of the organism multiply if the food is subsequently held at temperatures of 60 F-125 F (16 C-52 C). If served without adequate reheating, live vegetative forms of *C. perfringens* may be ingested. The bacteria then elaborate the enterotoxin that causes the characteristic symptoms of diarrhea and abdominal cramping.

Laboratory confirmation of *C. perfringens* foodborne outbreaks requires quantitative cultures of implicated food or stool from ill persons or by demonstration of *C. perfringens* enterotoxin in stool. Unfortunately, laboratory tests could not be conducted for *C. perfringens* in this outbreak investigation because there was no leftover food available. Also, the delay between symptom onset and collection of stool specimens made them unsuitable for testing. To avoid illness caused by this organism, food should be eaten while still hot or reheated to an internal temperature of greater than or equal to 165 F (greater than or equal to 74 C) before serving.

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